

REMARKS/ARGUMENTS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action.

The specification was objected to based on an informality that has been corrected by the current amendment.

Claims 1, 2, 5, 6, 8, 10, 11 and 13-16 were rejected under 35 U.S.C. 112, second paragraph, due to an antecedent basis issue. Independent claims 1 and 14 have been amended and now recite “a number of coaxial groups comprising at least two coaxial layers.” Applicant respectfully submits that the terms “at least two coaxial layers” provide sufficient antecedent basis for the subsequent limitation “each coaxial layer.”

Claim 11 was additionally rejected for reciting “consists fully or partially of superconducting, metallic, and semiconducting materials.” Claim 11 has been amended to recite “consists fully or partially of superconducting, metallic, or semiconducting materials.”

Claims 1, 2, 5, 6, 8, 10, 11 and 13-16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuki in view of Long. Amended claim 1 recites, “wherein the superconducting cable has fewer cooling channels for refrigerant than phase conductors.” Support for the amendment can be found, for example, on page 5 of the application, which teaches that “the refrigerant may be applied to each individual phase conductor, each individual group, a number of groups, or preferably the entire cable with a pipe system.” In other words, cooling may be applied to each phase conductor individually, or to several phase conductors simultaneously. In FIG. 6, for example, the superconducting cable has common refrigerant channel 9 for the entire cable.

Matsuki teaches a cable having individual cable bodies 16 for each phase u, v, w. Each cable body 16 has a cooling medium passage 9 and the overall cable has a cooling medium passage 17 in the center. Therefore, contrary to claim 1, Matsuki has a greater number of cooling channels than phase conductors.

The present application at page 3 discusses a problem associated with Matsuki's technique of having a refrigerant channel in each phase conductor. The problem is that the individual phase conductors consist of complete, independent cables having a refrigerating channel, cable conductors, electrical insulation and an electrical screen. In practice, it is impossible to produce a compact and inexpensive cable with a high number of groups with a number of phases in each group using Matsuki's method. By having fewer cooling channels for refrigerant than phase conductors, as recited in claim 1, manufacturing of the cable is simplified when compared with Matsuki, and the cable can be made more compact than Matsuki's cable.

The above-discussed deficiencies of Matsuki are not corrected by Long. In view of the differences between the subject matter of claim 1 and the cited references, applicant respectfully submits that claim 1 is allowable over said references. Claims 2, 5, 6, 8, 10, 11, 13, 15 and 16 depend from claim 1. The arguments provided above with respect to claim 1 also apply to claim 14.

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NKTR-34155US1.

Respectfully submitted,
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